



SR 520 Bridge Replacement and HOV Project

I-5 to Floating Bridge Tunnel Concept Review Executive Summary April 2006

In the fall of 2005, a group of community members approached the SR 520 Bridge Replacement and HOV Project with a concept idea for building a tunnel between I-5 and the SR 520 floating bridge as part of the replacement project. The group proposed that building a tunnel through this area would relieve congestion, improve connections to I-5, be better for the environment, and reduce the project cost. In December of 2005, WSDOT began a review of this citizen concept, which highlighted some initial issues such as the transition from the tunnel to the floating bridge, environmental concerns, and difficult interchanges and local access connections.

Following the initial review, WSDOT conducted additional analysis to identify possible solutions to the identified issues. Working with an international tunnel engineering expert, the project team evaluated a revised conceptual plan and profile drawings. The analysis highlighted benefits as well as a number of engineering complexities and environmental concerns associated with the tunnel concept.

- Many issues regarding the built environment would be improved in some local neighborhoods, including noise, visual quality and land use.
- There are net increases in environmental effects due to dredging in the Arboretum, including along Marsh and Foster islands, and the need to build an artificial island in Lake Washington. This would mean that species protected under the Endangered Species Act would be disturbed. These issues would likely create difficulties in acquiring the necessary permits to build a tunnel.
- The concept includes constructing interchanges in tunnels, which is extremely difficult due to structural stability limitations, the size of the interchanges, safety issues, and complex connections.
- The concept involves constructing multiple different types of tunnels (bored, immersed, cut-and-cover, and others), adding additional engineering and construction complexities.
- The soil through the Union Bay area is unstable and considerable fill would be required to provide an adequate foundation for the tunnel. In addition, extremely invasive procedures would need to be conducted to create seismic stability in this area.
- This concept would cost billions of dollars more than any of the current plans.

Based on this analysis, WSDOT recommends that the tunnel concept not be studied further. To review additional details and graphics regarding the tunnel and the project team's engineering and environmental analysis, we can email you a PDF of the full memo (I-5 to Floating Bridge Tunnel Concept Technical Memorandum). Please fill out the contact form (linked in the left navigation bar of the project Web site) if you would like a full report emailed to you.